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THE NORTH AMERICAN ANDRENINE BEES OF THE SUBGENUS MELANDRENA WITH DESCRIPTIONS OF NEW SPECIES

(Hymenoptera: Andrenidae)

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The following keys, notes, and descriptions are offered primarily to facilitate identification of the several superficial by similar species of *Melandrena* which collect pollen only from flowers of the genus *Oenothera* (Onagraceae) (see following paper by Linsley, MacSwain and Smith, 1955). Locality records are supplemental to those provided by Timberlake (1937) and Linsley (1938). A few specimens in the material before us appear to represent new species other than the ones described below. However, we have not proposed names for them at this time because of inadequate series or lack of pertinent ecological data which might give them special significance.

The species of *Melandrena* are medium-sized to rather large *Andrena* with the integument black (sometimes partially red or tinted with reddish or bluish). The females of most species have black pubescence, most of the males predominantly white. The thorax and propodeum of the females are aften coarsely sculptured and the process of the labrum is usually reflexed and emarginate. For a fuller characterization of the group see Lanham (1949).

Key to the Species of Melandrena

Females

1. Metasoma black, sometimes tinted with reddish or bluish.....2
— Metasoma with first three or four segments red, remainder black; dorsum of thorax coarsely punctate, clothed with a few scattered black hairs; pleura sparsely clothed with black hairs. Length about 10 mm. Mesilla Valley, New Mexico.....*prima* Casad[2]

[1] The writers are indebted to P. H. Timberlake for making available for study the extensive series in his collection at the Citrus Experiment Station, University of California, Riverside, A. T. McClay for providing material from the collection of the Department of Entomology and Parasitology, University of California, Davis, and D. F. Hardwick and W. R. Mason for loaning material from the Canadian National Collection at Ottawa. Most of the remaining records are from the collection of the California Insect Survey, University of California, Berkeley. Dr. J. G. Rozen assisted in the transcription of data from specimens.

[2] Characters extracted from original description.

2. Dorsum of thorax clothed with black or dark brownish hairs.....3
— Dorsum of thorax clothed with bright reddish hairs; mesoscutum dull; metasomal terga with a narrow impunctate margin, pubescence long, dense, plumose. Length of anterior wing 10.0 mm.[3] Colorado and Wyoming. Monolectic on *Oenothera*.....*anograe* Cockerell
3. Wings heavily infuscated.....4
— Wings lightly tinted with black.....5
4. Wings very dark black; size larger, length of anterior wing 9.7–11.0 mm. California: Sierra Nevada montane. Monolectic on *Oenothera*.....*grundeli grundeli* Linsley[4]
— Wings dark brownish: size smaller, length of anterior wing 8.8–9.6 mm. Southern California montane. Monolectic on *Oenothera*.....*grundeli bernardina* Linsley
5. Propodeal enclosure coarsely rugose; most mesoscutal punctures less than one diameter apart.....6
— Propodeal enclosure rugulose: most mesocutal punctures at least one diameter apart.....10
6. Metasomal terga with a very broad impunctate apical margin, covering most of apical impression, at least medially.....7
— Metasomal terga with a narrow impunctate apical margin, covering less than one-half of apical impression.....8
7. Mesoscutum dull, interspaces between discal punctures reticulate; dorsal metasomal hairs long, predominantly plumose. Length of anterior wing 7.4–7.9 mm. Lowlands of coastal and interior southern California. Monolectic on *Oenothera* (?).....*blaisdelli* Cockerell
— Mesoscutum shining, interspaces between most discal punctures smooth, not reticulate; dorsal metasomal hairs short, predominantly simple. Length of anterior wing 7.0–7.5 mm. California: western margin of Mojave Desert. Monolectic on *Oenothera* (?).....*flandersi* Timberlake
8. Tibial scopa loose, suberect; notal hairs of thorax not dense and velvety, underlying punctures distinct.....9
— Tibial scopa dense, compact; notal hairs of thorax dense, velvety, black, underlying punctures very dense, subcontiguous. Length of anterior wing 7.2–8.0 mm. Lowlands of coastal and interior California. Monolectic on *Phacelia*.....*nigra* Provancher
9. Propodeal enclosure obliquely rugose; notal hairs of thorax brownish; discal hairs on second metasomal tergum short, predominantly simple; labrum with produced apex of process wider than long, depresso-emarginate. Length of anterior wing 8.1–8.9 mm. Colorado Desert, California. Monolectic on *Oenothera*.....*rozeni* Linsley and MacSwain
— Propodeal enclosure irregularly rugose; notal hairs of thorax black; most discal hairs on second metasomal tergum long, predominantly plumose; labrum with produced apex of process usually longer than wide, constricted at base. Length of anterior wing 8.4–9.1 mm. Lowlands and foothills of central and southern California and southeastern Arizona. Monolectic on *Oenothera*.....*oenotherae* Timberlake

[3] Wing lengths measured from apex of costal sclerite.

[4] **A. (M.) omninigra** Viereck, 1917, has not been positively recognized and may be identical with one of the subspecies of **grundeli.**

10. Tibial scopa loosely formed of long, erect hairs; discal hairs on second metasomal tergum short (less than 0.15 mm.) predominantly simple....11
— Tibial scopa densely formed of compact, more or less depressed hairs; discal hairs on second metasomal tergum moderately long (more than 0.20 mm.), predominantly plumose....12
11. Mesoscutum shining, punctures mostly two or more puncture widths apart; metasomal terga with a narrow impunctate apical margin comprising, at middle, less than one-third of apical impression. Length of anterior wing 9.0 mm. Colorado Desert, California. Monolectic on *Oenothera*....*rubrotincta* Linsley
— Mesoscutum feebly shining, punctures mostly one or two puncture widths apart; metasomal terga with a broad impunctate apical margin comprising, at middle, one-half of apical impression, Length of anterior wing 8.5–9.2 mm. Colorado Desert, California. Monolectic on *Oenothera*....*linsleyi* Timberlake
12. Labrum with process apically produced and emarginate; smaller species....13
— Labrum with process entirely, not produced; larger species. Length of anterior wing 9.25–10.25 mm. California: western Mojave Desert. Monolectic on *Oenothera*....*mojavensis* Linsley and MacSwain
13. Metasomal terga black, rarely with a faint bluish tint; propodeum finely granulate-punctate, enclosure finely, closely, longitudinally rugulose; impunctate apical margin of metasomal terga moderately broad. Length of anterior wing 7.9–8.9 mm. California: western Mojave Desert and southeastern San Joaquin Valley. Monolectic on *Oenothera*....*deserticola* Timberlake
— Metasomal terga with a distinct bluish tint; propodeum coarsely granugranulate-punctate, enclosure strongly and transversely or obliquely rugulose; impunctate apical margin of metasomal terga narrow. Length of anterior wing 8.2–8.9 mm. California: Sierra Nevada montane. Monlectic on *Oenothera*....*vanduzeei* Linsley

Males

1. Wings heavily infuscated....2
— Wings lightly tinted with black....3
2. Hairs of face, thorax and legs almost completely white. California: Sierra Nevada montane....*grundeli grundeli* Linsley
— Hairs of face, thorax and legs predominantly black. Southern California montane....*grundeli bernardina* Linsley
3. Dorsum of thorax clothed with white or predominantly whitish hairs....4
— Dorsum of thorax clothed with bright reddish hairs; mesocutum dull; metasomal terga with a narrow impunctate margin, pubescence long, dense, plumose. Colorado and Wyoming....*anograe* Cockerell
4. Metasomal terga with numerous long, erect, pale hairs; mesoscutum rather sparsely hairy on disk, surface not obscured by pubescence....5
— Metasomal terga without long erect, pale hairs except on first one; mesoscutum moderately densely to densely hairy (except *rozeni*)....6

5. Metasomal terga with a broad impunctate margin; hairs of face white; metasoma black. California: western margin of Mojave Desert..... ..... *flandersi* Timberlake
— Metasomal terga with a narrow impunctate margin; hairs of face predominantly black, with a white moustache; metasoma with a distinct bluish tint. California: Sierra Nevada montane..... *vanduzeei* Linsley
6. Metasomal terga with a moderately broad to broad impunctate margin; process of labrum emarginate or bilobed..... 7
— Metasomal terga with a narrow impunctate margin; process of labrum nearly entire, not bilobed; facial hairs black. Lowlands of coastal and interior California..... *nigra* Provancher
7. Facial hairs white or predominantly white..... 8
— Facial hairs black. Lowlands and foothills of central and southern California and southeastern Arizona..... *oenotherae* Timberlake
8. Enclosure of propodeum rugulose; dorsal metasomal pubescence white..9
— Enclosure of propodeum coarsely rugose; dorsal metasomal hairs black except on first metasomal tergum; length of anterior wing 7–9 mm. Colorado Desert, California..... *rozeni* Linsley and MacSwain
9. Process of labrum nearly twice as broad as long; facial hairs white; dorsum of thorax feebly shining; length of anterior wing 7–8 mm. Colorado Desert, California..... *linsleyi* Timberlake
— Process of labrum about as long as broad; facial hairs predominantly white but with an intermixture of black; length of anterior wing 7 mm. Lowlands of coastal and interior southern California.... *blaisdelli* Cockerell

ANDRENA (MELANDRENA) ANOGRAE Cockerell

Andrena anograe Cockerell, 1901, Canad. Ent., 33:154, ♀.

Andrena micranthophila Cockerell, 1906, Bull. Amer. Mus. Nat. Hist., 22:432, ♀ ♂, *New synonymy.*

New records from the Timberlake collection are as follows: Salida, Colorado (1 ♀, June 20, bearing a few pollen grains of *Oenothera*, Chas. Wagner); Princeton Hot Springs, Colorado (1 ♂, June 16, 1933, Chas. Wagner); and Cheyenne, Wyoming (1 ♂, June 11, 1920).

Mr. Timberlake, who has the type of *micranthophila* regards it as the same as *anograe*. We are likewise unable to distinguish the two on the basis of the published descriptions and available specimens.

ANDRENA (MELANDRENA) GRUNDELI GRUNDELI Linsley, new status

New California records for *A. (M.) grundeli grundeli* include: Snowline Camp, El Dorado Co. (1♀, June 20, 1948, P. D. Hurd) (1 ♀, June 27, 1948, J. W. MacSwain); Folsom, Sacramento Co. (1 ♀, May 18, 1952, T. Haig); Yosemite Valley, Mariposa Co. (1 ♀, March 2, 1938, J. R. Warren); and Oakhurst, Madera Co. (1 ♀, June 8, 1942, E. G. Linsley).

ANDRENA (MELANDRENA) GRUNDELI BERNARDINA Linsley, new status

California records for this subspecies are: Tanbark Flat, Los Angeles Co. (3 ♀ ♀, June 20, 1950, at *Cyptantha* but not collecting pollen, J. W.

MacSwain) (1 ♀, June 23, 1952, Joan Linsley); San Antonio Canyon, Los Angeles Co. (1 ♀, May 20, 1929, D. Clancy); and Seeley Flats, San Bernardino Mts. (2 ♀ ♀, July 3-5, 1917, R. May).

ANDRENA (MELANDRENA) BLAISDELLI Cockerell

Material, all from California, which has not been reported previously is as follows: Riverside (8 ♀ ♀, March 4 to May 16, at flowers of *Cryptantha intermedia,* but not collecting pollen; 29 ♂ ♂, February 27 to April 26, at *Cryptantha intermedia* (P. H. Timberlake); Galivan, Riverside County (3 ♂ ♂, April 4, 1952, *Cryptantha intermedia;* 1 ♀, March 6, 1935, at *Oenothera dentata* but not collecting pollen, C. M. Dammers) (1 ♂, February 22, 1937, at *Salix lasiolepis,* E. G. Linsley); Altadena, Los Angeles County (1 ♀, May 2, 1936, C. D. Michener); La Crescenta, Los Angeles County (1 ♂, April 19, 1936, *Cryptantha intermedia,* E. G. Linsley); Cajon Pass, Los Angeles County (1 ♀, April 25, 1936, D. Clancy); Tujunga, Los Angeles County (1 ♂, April 16, 1937, *Oenothera bistorta,* P. H. Timberlake); and Mojave Desert near Deep Creek, San Bernardino County (1 ♀, April 30, 1939, *Cryptantha intermedia,* but not collecting pollen, P. H. Timberlake).

The males previously regarded as *blaisdelli* by Timberlake (1937) and Linsley (1938) are here treated as *oenotherae.* They are currently so assigned in the Timberlake collection and we have found these males at Antioch, Contra Costa County, California with female *oenotherae* far north of the known range of *blaisdelli*

ANDRENA (MELANDRENA) FLANDERI Timberlake

New records, all from California, include: Short Canyon, 6.5 miles N.W. of Inyokern, Kern County (2 ♂ ♂, 1 ♀, April 12, 1954, at *Cryptantha* but not collecting pollen, J. W. MacSwain); Kramer Junction, San Bernardino County (2 ♀ ♀, April 27, 1946, E. G. Linsley, J. W. MacSwain and R. F. Smith) (1 ♀, April 30, 1953, at *Chaenactis* but not collecting pollen, P. D. Hurd); Pallatt Creek, Los Angeles County (1 ♀, April 22, 1950, C. D. MacNeill); and Morongo, San Bernardino County (1 ♀, April 22, T. D. A. Cockerell).

When females of this species and *A. blaisdelli* were examined all but one carried at least a few pollen grains of *Oenothera,* none were found with pollen loads from other plants. This evidence is interpreted as indicating that both species collect pollen from *Oenothera.*

ANDRENA (MELANDRENA) NIGRA Provancher

Previously unrecorded collections, all from California, include the following: Temecula, Riverside County (5 ♀ ♀, April 24, 1951, E. I. Schlinger, and R. C. Bechtel); Westwood Hills, Los Angeles County (1 ♀, February 29, 1936, E. G. Linsley); Palmdale, Los Angeles County (1 ♀, April 11, 1936); 6 miles East of Pearblossom, Los Angeles County (1 ♀, May 2, 1952, G. A. Marsh); Claremont, Los Angeles County (1 ♂, E. O. Essig); Carpenteria, Santa Barbara County (2 ♀ ♀, April 15, 1938, *Phacelia distans,* B. E. White); Panoche Hills, San Benito County (1 ♀, April 29, 1922); Little

Panoche Canyon (1 ♀, May 15, 1930, E. G. Linsley); and 6 miles West of Tracy, San Joaquin County (1 ♀, March 6, 1950, J. W. MacSwain).

A. nigra is aberrant in that it is the only species of the North American *Melandrena* which is definitely not associated with *Oenothera.*

Andrena (Melandrena) rozeni Linsley & MacSwain, new species

Female.—Integument black metasoma faintly tinted with reddish; hairs black, those of notum of thorax with a brownish cast. *Head* with clypeus convex, shining, finely and closely punctured with a faint indication of median smooth line; labrum with process broader than long, base a low triangle, apex distinctly produced, broader than long, feebly depresso-emarginate in type, more distinctly in some paratypes; vertex with an impunctate area along upper margin of facial foveae between ocelli and compound eyes; antennae with first flagellar segment about as long as second and third combined, flagellum dark reddish-brown beneath. *Mesosoma* with mesoscutum dullish, finely and closely punctured, punctures on posterior middle of disk one to one and one-half puncture widths apart with interspaces minutely reticulate; mesoscutellum punctured much as mesoscutum; mesopleura a little more densely punctured than mesoscutum; propodeum with basal enclosure well defined, very coarsely and somewhat obliquely rugose, remaining surface coarsely, densely rugoso-punctate; wings subhyaline, tinted with blackish; legs with scopa of posterior tibiae long and dense. *Metasoma* slender, apical margin of terga scarcely constricted, surface shining, finely but not closely punctured, first metasomal tergum with a narrow impunctate margin, broad on terga two to four; pubescence of second tergum moderately thin, short, simple. Length approximately 11.5 mm., anterior wing 8.5 mm.

Male.—Integument black; hairs of head, thorax, propodeum, anterior femora (intermediate and posterior femora predominantly), and first metasomal tergum, long, erect, white, elsewhere dark brown or black. *Head* with clypeus shining, moderately densely punctate at middle, more densely at sides; labrum with process emarginate, somewhat acutely bilobed; antennae with flagellum brownish, first flagellar segment nearly as long as second. *Mesosoma* with dorsal pubescence thin, not obscuring punctation; mesoscutum dull, moderately closely punctate on disk, densely at sides; propodeum densely punctate, enclosure coarsely, longitudinally rugose. *Metasoma* with a narrow impunctate margin on first metasomal tergum, broad on terga two to five. Length approximately 10 mm., anterior wing 8.5 mm.

Holotype female and allotype male (California Academy of Sciences, Entomology) from NEAR NEEDLES, SAN BERNARDINO COUNTY, CALIFORNIA, March 6, 1930 (E. G. Linsley) and paratypes, all from California, as follows: four females and one male with same data as holotype, two females from Needles, December 3 and 4, 1921, two males from Needles, March 5, 1947 (E. G. Linsley and R. F. Smith), one male 30 miles S. of Needles, March 6, 1946 (E. G. Linsley), one male from Coachella Valley, River-

side County, March 4, 1936 (M. L. Cook), one male and one female 4 miles E. of Desert Center, Riverside County, April 5, 1951 (P. D. Hurd), one female from Hopkins Well, Riverside County, April 28, 1949, on *Oenothera trichocalyx* (J. E. Gillaspy), two females from the same locality, April 29, 1952 (J. G. Rozen), 67 males and 31 females, a few with heavy loads of *Oenothera* pollen, from Thousand Palms, Riverside County, on various dates from February 25 to March 16, 1955 (D. F. Hardwick, J. E. H. Martin, W. R. Mason and W. R. Richards), five males and two females from Palm Canyon, Riverside County, February 23, 1955 (W. R. Mason), one female from Palm Desert, Riverside County, February 28, 1955 (W. R. Mason), nine males and one female from Salton Sea, Riverside County, March 2, 1955 (W. R. Richards), one female from La Quinta, Riverside County, March 5, 1955 (D. F. Hardwick), one female from Bell Picnic Area, Joshua Tree National Monument, April 9, 1952 (J. W. MacSwain), one male from Indio, Riverside County, April 5, 1951 (J. W. MacSwain), and a copulating pair, same data (P. D. Hurd), and one male from 7 miles N. of Vidal Junction, San Bernardino County, April 3, 1951 (E. G. Linsley).

A stylopized male and female from Needles, California, March 10, 1923 and December 17, 1921 respectively (R. M. Bohart collection) are not included in the paratype series. Additional stylopized males and females were among the series collected by Hardwick, Martin, Mason and Richards. Some of the females in the type series bear *Oenothera* pollen.

A. (M.) rozeni is closely related to *A. (M.) oenotherae* Timberlake. The female differs from *oenotherae* in having the produced apex of the process of the labrum wider than long, the notal hairs of the thorax brown rather than black, the upper margin of the facial foveae impunctate, the enclosure of the propodeum more coarsely and obliquely rugose, and the metasoma more slender, with the apical margins of the terga feebly impressed and constricted, the surface less densely punctate and pubescent, with the impunctate margins of the metasomal terga broad except on the first one. The male differs at once from *oenotherae* in the white pubescence of the face and thoracic pleura.

Among the females there is some variation in the width of impunctate margin of the metasomal terga, the development of the

apex of the process of the labrum, and the extent of the brownish pubescence on the thorax.

ANDRENA (MELANDRENA) OENOTHERAE Timberlake

New California records: Newport Bay, Orange County (1 ♀, June 26, 1941, P. D. Hurd); Balboa Island, Orange County (1 ♀, June 17, 1917, R. May); El Segundo Dunes, Los Angeles County (2 ♀ ♀, May 17, 30, 1941, K. D. Snyder); Short Canyon, 6.5 miles N. W. of Inyokern, Kern County (20 ♀ ♀, various dates in April (1954, 1955 on *Oenothera dentata* var. *johnstonii* Munz, E. G. Linsley, J. M. Linsley, J. W. MacSwain, R. F. Smith); 20 mi. E. Bakersfield, Kern County (3 ♀ ♀, March 28, 1953, J. W. MacSwain); Blackwells Corner, Kern County (1 ♀, April 7, 1950, at *Lupinus* but not collecting pollen, P. D. Hurd); near Hemet, Riverside County (1 ♀, June 7, 1942 at *Hemizonia kelloggii* but not collecting pollen. P. H. Timberlake); Palm Springs, Riverside County (1 ♂, March 24, 1933, P. H. Timberlake) (1 ♀, March 20, 1948, W. McNeil); Carlsbad, San Diego County (1 ♂, March 21, 1933, *Layia platyglossa*, H. L. McKenzie); Newport, Orange County (1 ♂, August 6, 1933, C. M. Dammers); Riverside (49 ♂ ♂, various dates in various years from February 10 to April 4, mostly at flowers of *Cryptantha intermedia*, 1 or 2 each from *Sisymbrium*, *Encelia*, *Lantana* and *Calandrinia*, P. H. Timberlake); Dillon Beach, Marin County (2 ♀ ♀, February 12, 1939, nesting in sand, J. W. MacSwain); Antioch, Contra Costa County (1 ♂, April 25, 1936, M. Cazier); Wineville, Riverside County (1 ♂, April 15, 1938, at *Oenothera*, C. M. Dammers); Glendale, Los Angeles County (6 ♀ ♀, June 25, 1941, and July 12, 20, 1950, E. I. Schlinger); Hemet, Riverside County (2 ♀ ♀, April 16, 1954, N. A. Browne); and Saticoy, Ventura County (2 ♀ ♀, May 30, 1926, L. M. Smith)

A. oenotherae is the most widely distributed and morphologically variable species of those which we have studied. It may be that it represents a complex of more than one species but if so we have been unable to distinguish them.

ANDRENA (MELANDRENA) RUBROTINCTA Linsley

New California records: Borego, San Diego County (1 ♀, March 26, 1941, Mrs. R. C. Dickson); 4 miles E. of Desert Center, Riverside County (1 ♀, April 5, 1951, P. D. Hurd); and LaQuinta, Riverside County (1 ♀, March 5, 1955, D. F. Hardwick).

ANDRENA (MELANDRENA) LINSLEYI Timberlake

Additional California records: near Needles, San Bernardino County (1 ♂, March 6, 1930, E. G. Linsley); Hopkins Well, Riverside County (2 ♀ ♀, April 27-28, 1949, *Oenothera*, J. E. Gillaspy and L .W. Quate) (6 ♀ ♀, April 29, 1952, at *Baileya* but not collecting pollen, P. D. Hurd, G. A. Marsh, and J. G. Rozen); Palm Springs, Riverside County (1 ♀, April 4, 1948, J. W. MacSwain); 18 miles W. of Blythe, Riverside County (1 ♀, April, 1952, at *Geraea canescens* but not collecting pollen, P. H. Timberlake); Thousand Palms, Riverside County (40 ♂ ♂, 22 ♀ ♀, including one mating pair, February 25–March 12, 1955, D. F. Hardwick, J. E. H. Martin, W. R. Mason, W. R. Richards; Palm Canyon, Riverside County (19 ♂ ♂,

6♀ ♀, February 23, 1955, W. R. Mason); Indio, Riverside County (3♂ ♂, March 4, 1955, 1♀ March 12, 1955, W. R. Mason); Salton Sea, Riverside County (23♂ ♂, 1♀, March 2, 1955, W. R. Richards); and La Quinta, Riverside County (13♂ ♂, February 28–March 5, 1955, D. F. Hardwick and J. E. H. Martin).

The capture of a mating pair on *Encelia* between 10 and 11 a.m. on February 26, 1955, by W. R. Mason, has permitted the recognition of the male of this species. Some individuals are stylopized.

Andrena (Melandrena) mojavensis Linsley & MacSwain, n.sp.

Female.—Integument black, metasoma faintly tinted with reddish in a few paratypes; hairs black. *Head* with clypeus convex, shining, coarsely and sub-contiguously punctured with a narrow, elevated, impunctate median line; labrum with process subtriangular, apex not produced, moderately elevated, elevation an inverted triangle; antennae with first flagellar segment about as long as second and third combined. *Mesosoma* with mesoscutum shining, finely and moderately densely punctured, punctures mostly one or two puncture widths apart, interspaces finely reticulate anteriorly and laterally, smooth postmedially; mesoscutellum with larger and slightly less dense punctures than mesoscutum; mesopleura a little more densely punctured than mesoscutum; propodeum finely granulate, punctate, basal enclosure well defined, surface very finely, irregularly rugulose; wings subhyaline, tinted with blackish; legs with scopa of posterior tibiae long and dense. *Metasoma* shining, clothed with numerous moderately long erect black hairs, hairs on posterior portion of second tergum simple, on anterior portion distinctly plumose, first four metasomal terga with an impunctate apical margin, which at middle occupies almost one-half of posterior depression, pubescence longer and denser toward lateral margin giving sinuous appearance to metasomal margins in dorsal aspect. Length approximately 14mm., anterior wing 10 mm.

Holotype female (California Academy of Sciences, Entomology) from SHORT CANYON, 6.5 MILES N.W. OF INYOKERN, KERN COUNTY, CALIFORNIA (April 13, 1954, *Oenothera dentata* var. *johnstonii* Munz (James M. Linsley); and 124 female paratypes, same locality (April 11 to 19, 1954 and March 15 and April 3 to 18, 1955, *Oenothera dentata* var. *johnstonii* and *O. clavaeformis* Torrey and Fremont, E. G. Linsley, J. M. Linsley, J. W. MacSwain, C. D. MacNeill and R. F. Smith).

A. (M.) mojavensis is the largest and most robust of the relatively clear-winged *Melandrena*. It is related to *A. (M.) rubrotincta* Linsley but it differs in the long pubescence of the metasoma, most of which is plumose, the smooth inter-puncture areas of the posterior discal region of the mesoscutum, the distinct, elevated, impunctate median line of the clypeus, and the totally black pube-

scence (in *rubrotincta* the pubescence is wholly or largely brownish-black).

ANDRENA (MELANDRENA) DESERTICOLA Timberlake

The following are new California records: Short Canyon, 6.5 mi. N. W. of Inyokern, Kern County (57 ♀ ♀, various dates in April, 1954, 1955, *Oenothera dentata* var. *johnstonii* Munz, E. G. Linsley, J. M. Linsley, J. W. MacSwain, R. F. Smith); Kramer Junction, Riverside County (2 ♀ ♀, April 27, 1950, S. F. Bailey); and 20 mi. E. Bakersfield, Kern County (1 ♀, March 23, 1953, J. W. MacSwain).

ANDRENA (MELANDRENA) VANDUZEEI Linsley

New California records include: Buck, Plumas County (1 ♀, July 23, 1937, F. X. Williams); and Mill Creek Camp, Tuolumne County (2 ♀ ♀, July 13, 1951, R. C. Bechtel).

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BOOK NOTICE

INSECTS OF MICRONESIA. Volume 1: Introduction by J. Linsley Gressitt. Bernice P. Bishop Museum, Honolulu, December, 1954. i-viii, 257 pp. 70 figs.

This is the first of a series of volumes covering all of the inscets and most of the other terrestrial arthropods inhabiting Micronesia—the Bonin, Volcano, Mariana, Carolina, Marshall and Gilbert Islands. Twenty volumes are planned in the ambitious project which is being carried out by well over 100 specialists. Dr. Gressitt is editor of the series as well as one of its authors. In volume 1 he describes the geology, soils, climate, flora, fauna, overall ecology, and economic entomology of Micronesia in general and of each island or island group. Many of his illustrations are maps but there are 95 photographs of terrain. He discusses collecting, collectors and collectors' localities—the last enumerated in a 16 page gazetteer. In this excellent piece of work the author sets a high standard for the rest of the series. As stated in the foreword, "His introduction is more than a technical preface; it presents a comprehensive survey of the natural history of Micronesia that will be of interest to a wide audience."—R. M. BOHART, *Department of Entomology and Parasitology, University of California, Davis.*